

Preliminary Amendment
Attorney Docket No. 053385

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

1. (Previously presented): A rare earth-iron-boron based magnet comprising a crystal grain boundary layer enriched in element M (M is at least one rare earth element selected from Pr, Dy, Tb, and Ho) by diffusion of the element M from the surface of the magnet having a rare earth-rich grain boundary layer disposed between main crystals and reaction of the element M with the rare earth-rich phase, wherein the coercive force H_{cj} and the content of the element M in the entire of the magnet satisfy the following equation:

$$H_{cj} \geq 1 + 0.2 \times M \text{ (wherein } 0.05 \leq M \leq 10)$$

Wherein H_{cj} is the coercive force (unit: MA/m), and M is the content of the element M in the entire magnet (% by mass).

2. (Original): The rare earth-iron-boron based magnet according to claim 1, wherein the residual magnetic flux density Br and the coercive force H_{cj} satisfy the following equation:

$$Br \geq 1.68 - 0.17 \times H_{cj}$$

wherein Br is the residual magnetic flux density (unit: T).

3. (Currently amended): The rare earth-iron-boron based magnet according to claim 1 [[or 2]], wherein the magnet is produced by powder molding and sintering or by powder molding and hot plastic processing, the grain boundary layer rich in the rare earth element is disposed between main crystals.

4. (Currently amended): A method for producing a rare earth-iron-boron based magnet according to ~~any one of claims 1 to 3~~ claim 1, the method comprising physically spraying a stream of fine particles of element M (M is at least one rare earth element selected from Pr, Dy, Tb, and Ho) or an alloy containing the element M onto the entire surface or a portion of the surface of a magnet supported in a reduced pressure vessel to deposit a film of the element M, and diffusing and penetrating the element M into the magnet from the surface thereof, the magnet having the rare earth-rich grain boundary layer disposed between main crystals, so that the element M reaches at least a depth corresponding to the radius of the crystal grains exposed on the outermost surface of the magnet, thereby forming a crystal grain boundary layer enriched in the element M by reaction with the rare earth-rich phase.

5. (Original): The method for producing a rare each-iron-boron based magnet according to claim 4, wherein the crystal grain boundary layer is enriched in the element M so that the concentration of the element M toward the surface side of the magnet.